## AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A targeting construct comprising:

(a) a first polynucleotide sequence homologous to a first portion of a target gene, wherein the target gene is a magnesium-dependent protein phosphatase gene represented by SEQ ID NO: 1;

(c) a second polynucleotide sequence homologous to a second portion of the target gene; and

(d) a selectable marker gene, located between the first polynucleotide sequence and the second polynucleotide sequence, wherein the targeting construct, when introduced into a mouse embryonic stem cell, results in a transgenic mouse having a disruption in the magnesium-dependent protein phosphatase gene, wherein the transgenic mouse when homozygous for the disruption in a magnesium-dependent protein phosphatase gene lacks production of functional protein encoded by the magnesium-dependent protein phosphatase gene and the transgenic mouse exhibits, relative to a wild-type mouse, a phenotypic abnormality selected from the group consisting of a lung abnormality, elevated white blood cell count, increased anxiety and increased pain threshold.

2. (Currently Amended) The targeting construct of claim 1, wherein the targeting construct further comprises a screening marker gene located between the first polynucleotide sequence and the second polynucleotide sequence.

3. (Currently Amended) A method of producing a targeting construct, the method comprising:

(a) obtaining a first polynucleotide sequence homologous to a magnesium dependent protein phosphatase gene represented by SEQ ID NO: 1;

(b) obtaining a second polynucleotide sequence homologous to ~~a~~ the magnesium dependent protein phosphatase gene;

(c) providing a vector comprising a selectable marker gene; and

(d) inserting the first and second sequences into the vector, to produce the targeting construct, wherein the targeting construct, when introduced into a mouse embryonic

stem cell, results in a transgenic mouse having a disruption in the magnesium-dependent protein phosphatase gene, wherein the transgenic mouse when homozygous for the disruption in a magnesium-dependent protein phosphatase gene lacks production of functional protein encoded by the magnesium-dependent protein phosphatase gene and the transgenic mouse exhibits, relative to a wild-type mouse, a phenotypic abnormality selected from the group consisting of a lung abnormality, elevated white blood cell count, increased anxiety and increased pain threshold.

4. (Currently Amended) A method of producing a targeting construct, the method comprising:

(a) providing a polynucleotide sequence homologous to a magnesium-dependent protein phosphatase gene represented by SEQ ID NO: 1;

(b) generating two different fragments of the polynucleotide sequence;

(c) providing a vector having a gene encoding a selectable marker gene; and

(d) inserting the two different fragments into the vector to form the targeting construct, wherein the targeting construct, when introduced into a mouse embryonic stem cell, results in a transgenic mouse having a disruption in the magnesium-dependent protein phosphatase gene, wherein the transgenic mouse when homozygous for the disruption in a magnesium-dependent protein phosphatase gene lacks production of functional protein encoded by the magnesium-dependent protein phosphatase gene and the transgenic mouse exhibits, relative to a wild-type mouse, a phenotypic abnormality selected from the group consisting of a lung abnormality, elevated white blood cell count, increased anxiety and increased pain threshold.

Claims 5-7 (Canceled)

8. (Currently Amended) A ~~non-human~~ transgenic ~~animal~~ mouse comprising a disruption in a magnesium-dependent protein phosphatase represented by SEQ ID NO: 1, wherein where the disruption is homozygous the transgenic mouse lacks production of functional protein encoded by the a magnesium-dependent protein phosphatase gene and the transgenic mouse exhibits, relative to a wild-type mouse, a phenotypic abnormality selected from the group consisting of a lung abnormality, elevated white blood cell count,

increased anxiety and increased pain threshold.

9. (Currently Amended) A cell ~~derived~~ isolated from the ~~non-human~~ transgenic ~~animal~~ mouse of claim 8.

10. (Currently Amended) A method of producing a transgenic mouse comprising a homozygous disruption in a magnesium-dependent protein phosphatase gene represented by SEQ ID NO: 1, the method comprising:

(a) introducing the targeting construct of claim 1 into a mouse embryonic stem cell;

(b) introducing the embryonic stem cell into a blastocyst;

(c) implanting the resulting blastocyst into a pseudopregnant mouse, wherein said pseudopregnant mouse gives birth to a chimeric mouse; and

(d) breeding the chimeric mouse to produce the transgenic mouse comprising a disruption in the magnesium-dependent protein phosphatase gene, wherein the transgenic mouse when homozygous for the disruption lacks production of functional protein encoded by the magnesium-dependent protein phosphatase gene and the transgenic mouse exhibits, relative to a wild-type mouse, a phenotypic abnormality selected from the group consisting of a lung abnormality, elevated white blood cell count, increased anxiety and increased pain threshold.

Claims 11-16 (Withdrawn)

Claim 17 (Canceled)

18. (Currently Amended) The transgenic mouse of claim ~~17~~ 8, wherein the lung abnormality comprises pulmonary lesions.

19. (Currently Amended) The transgenic mouse of claim 18, wherein the pulmonary lesions are consistent a symptom associated with pneumonia.

Claim 20-23 (Canceled)

Claims 24-44 (Withdrawn)

45. (Currently Amended) ~~A~~ The transgenic mouse of claim 8, wherein the ~~comprising a disruption in a magnesium-dependent protein phosphatase gene, wherein the transgenic mouse exhibits~~ increased anxiety is characterized by a decreased amount of time spent in a central region during an open field test.

Claim 46 (Canceled)

47. (Currently Amended) ~~A~~ The transgenic mouse of claim 8, wherein the ~~comprising a disruption in a magnesium-dependent protein phosphatase gene, wherein the transgenic mouse exhibits an~~ increased pain threshold is characterized by an increased response latency during a hot plate test.

Claims 48-51 (Canceled)

Claims 53-72 (Withdrawn)